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VIA OVERNIGHT COURIER

September 6, 2013

U. S. Securities and Exchange Commission
Division of Corporation Finance
100 F Street, N.E.
Mail Stop 4720
Washington, D.C. 20549

Attn: Mr. Daniel Greenspan, Assistant Director
Ms. Christina De Rosa

RE: **Luna Innovations Incorporated**
Form 10-K for the Year Ended December 31, 2012
Filed March 29, 2013
File No. 000-52008

Ladies and Gentlemen:

On behalf of Luna Innovations Incorporated (the "***Company***"), we are responding to comments received from the staff of the Division of Corporation Finance (the "***Staff***") of the U.S. Securities and Exchange Commission (the "***Commission***") by letter dated August 22, 2013 with respect to the Company's Annual Report on Form 10-K for the year ended December 31, 2012 (the "***Comments***"). Set forth below are the Company's responses to the Comments. The numbering of the paragraphs below corresponds to the numbering of the Comments, which for your convenience we have incorporated into this response letter. Page references in the text of this response letter correspond to the page numbers of the subject Form 10-K.

Item 1. Business, page 1

Intellectual Property, pages 6-7

1. We note your discussion of your patent portfolio on page 7. Please provide more disclosure regarding the description of your material patents and patent applications, including:

   - Specific products, product groups or technologies to which such patents relate;
   - Whether the patents are owned or licensed from third parties;
   - Type of patent protection;
   - Patent expiration dates;
   - Identification of applicable jurisdictions; and
   - Contested proceedings and/or third-party claims involving material patents.

Response to Comment 1:

In response to the Staff's comment, the Company proposes to revise the discussion of its intellectual property in its Annual Report on Form 10-K for the year ending December 31, 2013 (the "2013 Form 10-K") in the following format:

Intellectual Property

We seek patent protection on inventions that we consider important to the development of our business. We rely on a combination of patent, trademark, copyright and trade secret laws in the United States and other jurisdictions, as well as confidentiality procedures and contractual provisions to protect our proprietary technology and our brand. We control access to our proprietary technology and enter into confidentiality and invention assignment agreements with our employees and consultants and confidentiality agreements with other third parties.

Our success depends in part on our ability to develop patentable products and obtain, maintain and enforce patent and trade secret protection for our products, as well as to successfully defend these patents against third-party challenges both in the United States and in other countries. We will only be able to protect our technologies from unauthorized use by third parties to the extent that we own or have licensed valid and enforceable patents or trade secrets that cover our technologies. Furthermore, the degree of future protection of our proprietary rights is uncertain because we may not be able to obtain patent protection on some or all of our technology and because legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep our competitive advantage.

As of December 31, 2013, we owned or licensed approximately 82 U.S. and international patents and approximately 93 U.S. and international patent applications, and we intend to file, or request that our licensors file, additional patent applications for patents covering our products. Our issued patents generally have terms that are scheduled to expire between 2015 and 2031. However, patents may not be issued for any pending or future pending patent applications owned by or licensed to us. Claims allowed under any issued patent or future issued patent owned or licensed by us may not be valid or sufficiently broad to protect our technologies. Any issued patents owned by or licensed to us now or in the future may be challenged, invalidated or circumvented, and, in addition, the rights under such patents may not provide us with competitive advantages. In addition, competitors may design around our technology or develop competing technologies. Intellectual property rights may also be unavailable or limited in some foreign countries, which could make it easier for competitors to capture or increase their market share with respect to related technologies.

A discussion of our material patents and patent applications is set forth below:

Siemens Patent

We have licensed a U.S. patent and related foreign patents from Siemens AG concerning methods of preparing fullerene derivatives for use. We use these methods in our nanotechnology area to attach certain materials to carbon fullerenes. The U.S. patent expires in January 2016.

NASA Patents

We have licensed, on a non-exclusive basis, four U.S. patents and related foreign patents from the National Aeronautics and Space Administration, an agency of the U.S. government ("NASA"), which patents concern the measurement of strain in optical fiber using Bragg gratings and Rayleigh scatter and the measurement of the properties of fiber-optic communications devices. These patents expire between February 2017 and September 2020.

VTIP Patents

We have licensed, on an exclusive basis, two U.S. patents from Virginia Tech Intellectual Properties, Inc. ("VTIP") to commercialize Trimetasphere® nanomaterials for all fields of human endeavor. These patents expire in December 2019 and December 2022.

Coherent Patents

We have licensed, on a non-exclusive basis, several U.S. patents and other intellectual property rights owned or controlled by Coherent, Inc., related to the manufacturing, using, importing, selling and offering for sale of Coherent's "Iolon" brand of swept tunable lasers, which we market under our "Phoenix" brand of lasers. These U.S. patents expire between 2020 and 2025.

Shape Sensing Patents

We own several patents and patent applications that support our key strategic objective of becoming the leading supplier of fiber optic shape sensing technology for robotic and minimally invasive surgical systems. Two U.S. patents cover the use of optical frequency domain reflectometry, or OFDR, and multiple, closely spaced Bragg gratings for shape sensing, and the use of the inherent scatter as a strain sensor for shape sensing. These two patents expire in July 2025. We also have a patent application that covers certain refinements to the measurements covered in the first two patents, which are necessary in order to achieve the necessary accuracies for medical and other applications. We have filed this patent application in the United States, the European Patent Office, China, India, Russia, Brazil, Japan and Indonesia. These patents and patent applications could also support other medical applications or non-medical applications of our fiber optic shape sensing technology.

Item 1. Business, page 1

2. We note that you disclose material agreements with Intuitive Surgical, Inc., Philips Healthcare and Virginia Tech. Please provide more disclosure for each agreement, including:

   - The duration of each agreement;
   - Termination provisions;
   - The material rights and obligations of the respective parties, including, as applicable, royalty rights and the amount of aggregate milestone obligations;
   - Any material payments; and
   - The nature and scope of any intellectual property transferred.

Please also provide similar disclosure with respect to your agreements with NASA and Coherent, Inc., which are referenced as material contracts in your Exhibit Index on page 78. Alternatively, please advise us why such disclosure is not required.

Response to Comment 2:

In response to the Staff's comment, the Company proposes to revise the discussion of its intellectual property in its 2013 Form 10-K in the following format:

Material Agreements

Intuitive Surgical

In June 2007, we entered into an intellectual property licensing, development, and supply agreement with Intuitive Surgical, Inc., a technology leader in robotic-assisted minimally invasive surgery. Under this multi-year agreement, we are to develop and supply a fiber optic-based shape sensing and position tracking system for integration into Intuitive's future products.

We expect that this agreement with Intuitive will allow us to expand our presence within the medical devices market. Our shape sensing and position tracking system promises to provide real-time position measurements to help surgeons navigate through the body. The system consists of software, instrumentation and disposable optical sensing fiber. Our technology is designed to provide the user with an accurate, direct and continuous measurement of device location with no adverse effect from line of sight limitations and without introducing electrical signals or radiation into the body.

Under the agreement, Intuitive agreed to pay us an up-front license fee, development fees payable in quarterly installments for the first 18 months of the agreement, and certain other fees, subject to specified termination rights by Intuitive and other rights of repayment or reduction. There were also minimum purchase requirements by Intuitive, which were subject to our successful completion of the development criteria and certain other terms and conditions.

In January 2010, in connection with our settlement with Hansen Medical, Inc., and related emergence from Chapter 11 bankruptcy, we amended our agreement with Intuitive in order to make it consistent with our January 2010 license agreement with Hansen and to make certain other changes to provide, among other things, additional development of enhancements to the Intuitive product platform. The amendment also provides that Intuitive may request us to perform additional development work for a period of 10 years ending January 2020 and that this additional development work, if requested, would be paid by Intuitive on a time and materials basis. Under the amendment, Intuitive received a limited credit against a future portion of this development work and against the transfer pricing for the shape-sensing products supplied by us to Intuitive. The amendment also eliminated certain future fees that would have otherwise been payable by Intuitive and also eliminated all of Intuitive's future minimum purchase requirements. Intuitive continues to be obligated to purchase its reasonable commercial requirements of the shape-sensing products from us, subject to Intuitive's right to purchase optical fiber or sensors from other suppliers. The amendment also provided that the exclusive license granted by us to Intuitive in the medical robotics field was modified to allow for the co-exclusive license granted to Intuitive and Hansen and any restrictions or prohibitions on us to develop and manufacture products for Hansen were eliminated.

The agreement was further amended to provide for the development work to be conducted in 2010 and provide a budget for this work. The agreement was amended again in respect of development work to be conducted in 2011, setting certain milestones for us to achieve during 2011, establishing the amounts to be paid by Intuitive to us for this development work and providing that, if we successfully completed the milestones by a certain date, any remaining credit in favor of Intuitive would be eliminated. The agreement was amended again in respect of development work to be conducted in 2012, similarly setting certain milestones to be achieved by us during 2012, establishing the amounts to be paid by Intuitive to us for this development work and confirming that no further credit remained. In June 2013, we again amended our agreement with Intuitive, to cover development work during the period of 2013 through 2015. This amendment established certain milestones for us to achieve during this period, as well as the amounts to be paid by Intuitive for development work during this period.

The term of our agreement with Intuitive extends to January 2020 and is terminable by either party for cause upon notice and opportunity to cure.

As part of our agreement with Intuitive, we granted Intuitive a co-exclusive (with Hansen), royalty-free, fully paid, perpetual and irrevocable license to our fiber optic shape sensing/localization technology within the medical robotics field. The license can only be sublicensed by Intuitive in connection with Intuitive products and Intuitive and Hansen have the right to enforce the licensed intellectual property within the medical robotics field. Because of the nature of this perpetual license, the license does not provide for a term or termination provisions. Intuitive has granted to us a perpetual, royalty-free license to any intellectual property solely or jointly invented by Intuitive on our development project for all fields outside of medical robotics, which is exclusive to the extent of any patents and patent applications included in such intellectual property.

Philips Healthcare

In 2012, we entered into a development agreement with Philips Healthcare, acting through Philips Medical Systems Nederland BV (“Philips”). Under the development agreement, we conducted certain development work during 2012 in cooperation with Philips on a project to advance our fiber-optic shape sensing technology towards commercialization in the non-robotic medical field. We amended this development agreement to provide for certain development work to be performed in 2013. Under the development agreement, Philips agreed to pay us monthly on a time and materials basis, less a specified holdback amount, in accordance with corresponding milestones and estimated resource requirements. In addition, under the development agreement, Philips purchased specified prototype systems from us. The term of this development agreement continues until December 31, 2013. Philips may terminate this development agreement at any time without cause on 30 days notice. Either party may terminate this development agreement for cause after notice and an opportunity to cure. The development agreement has certain cross licenses to intellectual property invented by either party or jointly on the project. Philips has a sublicense from Hansen to our fiber-optic shape sensing technology in the non-robotic medical field. This sublicense is exclusive for parts of this field and non-exclusive for other parts.

Virginia Tech

Our nanomaterials activity is focused on fullerenes and tri-metal nitride endohedral fullerene ("Trimetasphere"®) materials. The Trimetasphere® nanomaterial is a carbon sphere with three metal atoms and a nitrogen atom enclosed. We have obtained an exclusive license from VTIP to commercialize Trimetasphere nanomaterials under two U.S. patents for all fields of human endeavor. The term of this license ends upon the last expiration date of the underlying patents, which is December 2022. The license provides for certain royalties to be paid as a percentage of our net sales, certain percentages of amounts received from any of our sublicensees and certain milestone payments based on product development phases. We paid VTIP a total of approximately $3,000 in royalties in respect of 2012 and 2011 under the license. We reimburse VTIP for patent costs incurred under the license. VTIP may terminate the license for cause. We may terminate the license at any time for any reason on 60 days notice.

We primarily utilize the VTIP license in our ongoing research into the potential use of Trimetaspheres to improve the safety of contrast agents commonly utilized in magnetic resonance imaging ("MRI") procedures. We believe that contrast agents utilizing our Trimetasphere nanomaterials may be able to provide a higher image contrast than existing contrast agents but with a lower risk of toxicity. Medical contrast agents for human use, such as our Trimetasphere nanomaterials, must be approved by the FDA or similar foreign regulatory agencies before they can be marketed, which we do not expect to occur for at least several years, if at all. As described below under "Government Regulation," this approval process can involve significant time and expense and may delay or prevent our products from reaching the market.

Coherent

In December 2006, we entered into an asset transfer and license agreement with Coherent. Under the agreement, we acquired the rights to manufacture Coherent's "Iolon" brand of swept tunable lasers as well as certain manufacturing equipment and inventory previously used by Coherent to manufacture the lasers. We continue to enhance, produce, and market these lasers under our "Phoenix" brand. Under this agreement, Coherent granted non-exclusive licenses to us for certain U.S. patents and other intellectual property rights owned or controlled by Coherent for making, having made, using, importing, selling and offering for sale the lasers. The term of this agreement is 10 years, but the patent licenses become fully paid and perpetual if we fulfill our royalty obligations during this 10-year period and the license to the other intellectual property rights is perpetual. These U.S. patents expire between 2020 and 2025. As consideration, we agreed to pay Coherent a total of $1.3 million over a period of two years and royalty payments on net sales of products sold by us that incorporate the lasers or that are manufactured using the intellectual property covered by the licenses. We paid Coherent a minimum royalty of $100,000 for 2011 and approximately $60,000 in royalties based on net sales for 2012. We also agreed to sell Coherent a limited number of lasers each year. The agreement is terminable by either party for cause after notice and an opportunity to cure.

The Phoenix laser is a miniaturized, external-cavity laser offering high performance in a compact footprint and is applicable to a range of fiber optic test and measurement, instrumentation, and sensing applications. These products employ frequency-tuned lasers to measure various aspects of the transmission properties of telecommunications fiber optic components and systems. Lasers are also used in fiber optic sensing applications such as distributed strain and temperature mapping, and distributed measurement of shape. We currently use these lasers within our ODiSI platform of products, our fiber optic shape sensing products and certain of our backscatter reflectometer products, and we also sell variations of the Phoenix laser as standalone products.

NASA

We have licensed, on a non-exclusive basis, certain patents from NASA under two license agreements. These patents concern the measurement of strain in optical fiber using Bragg gratings and Rayleigh scatter, and also the measurement of the properties of fiber-optic communications devices. Under the license agreements, we pay NASA certain royalties based on a percentage of net sales of products covered by the patents. We incur a royalty obligation to NASA based upon a specified percentage of the revenue earned on each product sold utilizing these patents subject to combined minimum royalties of $220,000 per year under the license agreements. The term of the license agreements continues until the expiration of the last licensed patent, which is September 2020. These license agreements may be terminated by us on 90 days notice. Either party may terminate the license agreements for cause upon certain conditions.

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As requested by the Staff, the Company acknowledges that:

- The Company is responsible for the adequacy and accuracy of the disclosure in the filing;
- Staff comments or changes to disclosure in response to Staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- The Company may not assert Staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please fax any additional comment letters concerning the above-referenced filings to (703) 456-8100 and direct any questions or comments concerning the above-referenced filing or this response letter to either the undersigned at (703) 456-8034 or Brian F. Leaf, of this office, at (703) 456-8053.

Very truly yours,

/s/ Darren K. DeStefano

Darren K. DeStefano

cc: Talfourd H. Kemper, Jr., Esq., General Counsel, Luna Innovations Incorporated
My E. Chung, President and Chief Executive Officer, Luna Innovations Incorporated
Dale E. Messick, Chief Financial Officer, Luna Innovations Incorporated